ABSTRACT

A method to detect and classify a structure of interest in a medical image is provided to enable high specificity without sacrificing the sensitivity of detection. The method is based on representing changes in three-dimensional image data with a vector field, characterizing the topology of this vector field and using the characterized topology of the vector field for classification of a structure of interest. The method could be used as a stand-alone method or as a post-processing method to enhance and classify outputs of a high-sensitivity low-specificity method to eliminate false positives.